

# Notice of Allowability

Application No.

09/737,675

Examiner

Elizabeth Quan

Applicant(s)

ROACH ET AL.

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## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to telecommunication held 5/5/2004.
2. ☒ The allowed claim(s) is/are 1,3-5,9-13,16,19,24,26,27,29,30,32 and 33.
3. ☒ The drawings filed on 13 December 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 05052004.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

### EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Schneck on 5/5/2004.

The application has been amended as follows:

Claim 1. An apparatus for filling and cleaning an analytical substrate of the type having microchannels, said microchannels having a plurality of inlet ports and a plurality of anode ports separated by a length of the microchannel, comprising:

an arm mounted on the apparatus such that the arm may be raised and lowered;

a tube-in-tube assembly having a plurality of tube assembly pressure tubes and a plurality of tube assembly vacuum tubes paired one inside the other;

a manifold mounted on said arm upon which said tube-in-tube assembly is mounted, said tube-in-tube assembly allowing a pressurized liquid to be distributed by said manifold into said pressure tubes and a vacuum source to be distributed by said manifold to said vacuum tubes; and

an injector mounted on said arm and spaced from said tube-in-tube assembly by a distance substantially corresponding to the length of the microchannel, wherein when said arm is lowered, ends of said pressurized tubes seal over inlet ports on said substrate and said injector also seals over an anode port on said substrate.

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Claim 19. An apparatus for filling and cleaning an analytical substrate of the type having microchannels including a plurality of input ports and a plurality of anode ports separated by a length of said microchannels comprising:

a container storing a liquid solution;

a vacuum source;

an arm that may be raised and lowered over a substrate having microchannels and microchannel openings;

a manifold mounted on said arm joined to said container and said vacuum source such that said manifold could distribute liquid solution and vacuum from said container and vacuum source, respectively;

a tube-in-tube assembly extending from said manifold and comprising a plurality of tube assembly pressure tubes and a plurality of tube assembly vacuum tubes paired one inside the other, wherein lowering of said arm allows tubes in said tube-in-tube assembly to seal over input ports on said substrate allowing solution distribution from said container to inlet ports of said substrate and also allowing solution removal by suction through said tube-in-tube assembly from said substrate inlet ports; and

an injector mounted on said arm and spaced from said tube-in-tube assembly by a distance substantially corresponding to the length of the microchannel, wherein lowering said arm brings the injector in pressure communication with the anode ports, wherein said tube-in-tube assembly and said injector allow sealing of both input ports and anode ports when said arm is lowered.

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Claim 30. The apparatus of claim 29 further comprising first and second compartments within respective first and second chambers and a separate control associated with said first and second compartments.

Claim 33. An apparatus for filling and cleaning an analytical substrate of the type having microchannels including a plurality of microchannel inlet ports and a plurality of microchannel anode ports, said inlet ports and anode ports separated by a length of said microchannel comprising:

- a container;

- a vacuum source;

- an arm that may be raised or lowered over the substrate;

- a manifold mounted on the arm in pressure tight fluid communication with said container and vacuum source [providing], wherein solution is provided from the container to said substrate and [vacuuming] solution is removed from said substrate with said vacuum source, said manifold having an upper chamber having a plurality of first compartments having a first plurality of openings on a lower surface of each of said plurality of first compartments, and a lower chamber having a plurality of second compartments having a second plurality of openings on a lower surface of said plurality of second compartments, wherein said second plurality of openings on said lower surface of said lower chamber are larger than said first plurality of openings on said lower surface of said upper chamber first compartments, said first plurality of openings being in vertical alignment with said second plurality of openings;

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a plurality of pressure [supply] tubes inserted into first openings of said upper chamber first compartments and in fluid communication with said container through said manifold;

a plurality of vacuum [supply] tubes inserted into said [opposed] second openings of said lower chamber second compartments and in vacuum communication with said vacuum source through said manifold, wherein said pressure tubes extend through said vacuum tubes;

an assembly for fluidic and pressure communication with said first and second compartments of said upper and lower chambers of said manifold and inlet ports of said substrate wherein said assembly allows for simultaneous distribution and suction of fluid to and from said substrate and said upper and lower chamber of said manifold; and

an injector mounted on said arm and spaced from said tube-in-tube assembly by a distance substantially corresponding to the length of the microchannel such that when said arm is lowered the injector is in pressure communication with the substrate for injecting a liquid media into the microchannels through the anode ports of said substrate wherein each of said plurality of microchannels is formed on a surface of said substrate and has an inlet port.

Cancel claims 28 and 34-40.

2. The following is an examiner's statement of reasons for allowance: The prior art of record does not teach or fairly suggest the combination of limitations in each of claims 1, 19, and 33. U.S. Patent No. 4,635,665 to Namba et al., U.S. Patent No. 5,948,359 to Kalra et al., or combinations thereof do not teach or fairly suggest the injector, which is mounted on an arm, is spaced from the tube-in-tube assembly, which is mounted on a manifold on the arm and has a

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plurality of pressure tubes and plurality of vacuum tubes paired one inside the other, by a distance substantially corresponding to the length of the microchannel.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (571) 272-1261. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth Quan  
Examiner  
Art Unit 1743

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Jill Warden  
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